

the RARS

Exciter

Raleigh Amateur Radio Society



Worldwide Friendship

May, 2003 Number 386

MS WALK APRIL 5

**GENERAL MEETING
MAY 13, 2003 (MAY ONLY)**

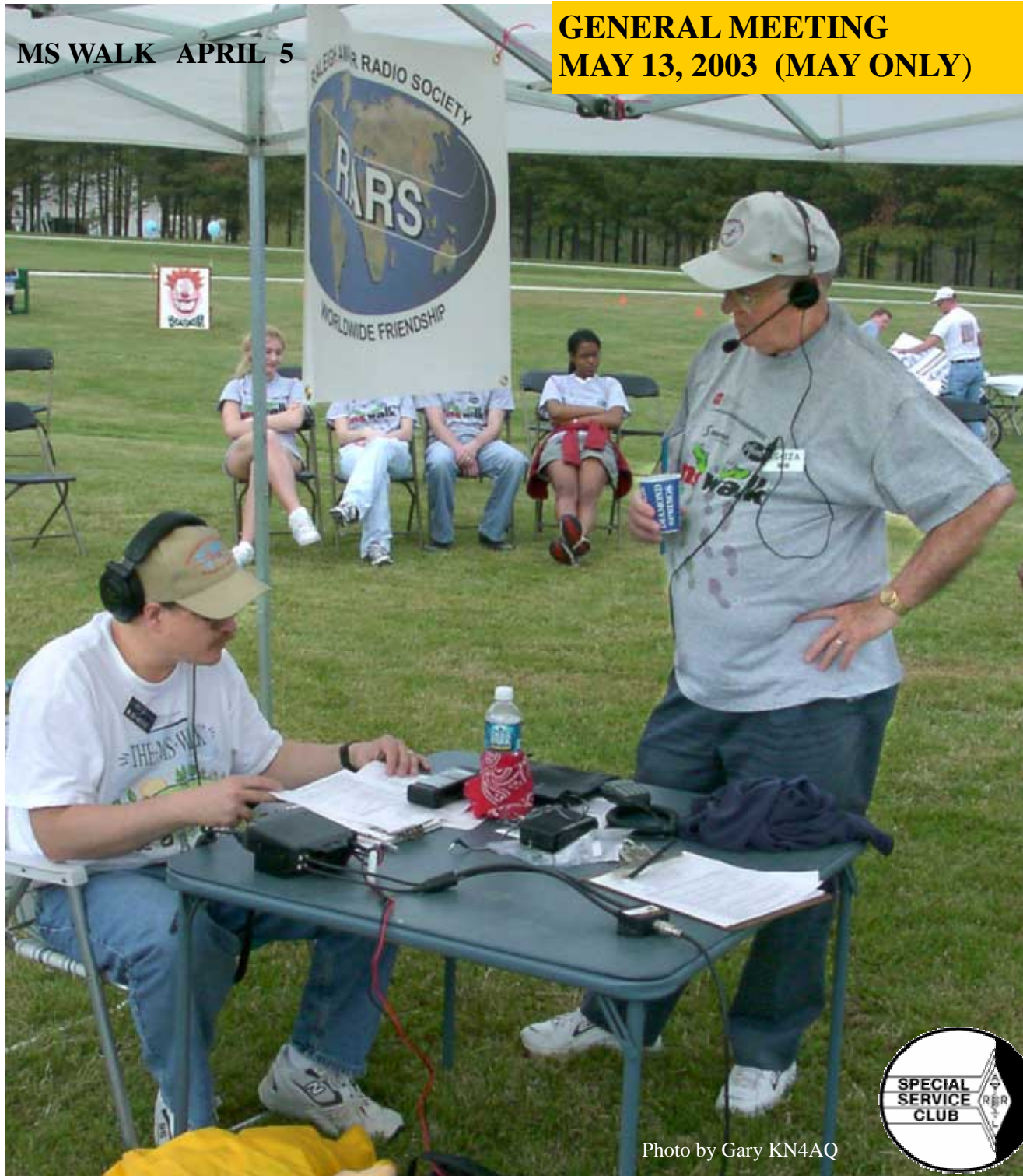


Photo by Gary KN4AQ



The Exciter

The **Exciter** is the monthly newsletter of the Raleigh Amateur Radio Society. It is available in both printed and electronic form. The printed version is mailed to members just before each club meeting. The electronic form, in Adobe Acrobat PDF format, is e-mailed about a week earlier.

We solicit both articles and advertising. The deadline for submissions is first Friday of the month or Friday after the monthly meeting. Contact the Editor.

The views contained in the Exciter are those of the individual authors, and are not necessarily the views of the Editor, or the Raleigh Amateur Radio Society.

The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the Amateur Radio community in the greater Triangle area. In 1999, we incorporated a new RARS, and obtained 501(c)(3) Non-Profit tax status.

The objectives of the club are to promote worldwide friend-ship through Amateur Radio; to be of public service by providing radio communications in times of disaster, emergency, or civic need; to educate members in radio technique; and to provide training classes to assist in obtaining Amateur Radio licenses.

Anyone interested in Amateur Radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18.00 per year (from July 1 through June 30). Additional immediate family members pay \$5.00 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12.00 per year. Dues for non-licensed Associate members are \$9.00 per year.

Applications for membership may be obtained from the treasurer, or the RARS web site (www.rars.org).

Officers

President:	Bernard Blackmon W4BRB 919-467-8719 bernardb@mindspring.com
Vice-President:	Andy Peterson NI4S 919-845-6251 ni4s@arrl.net
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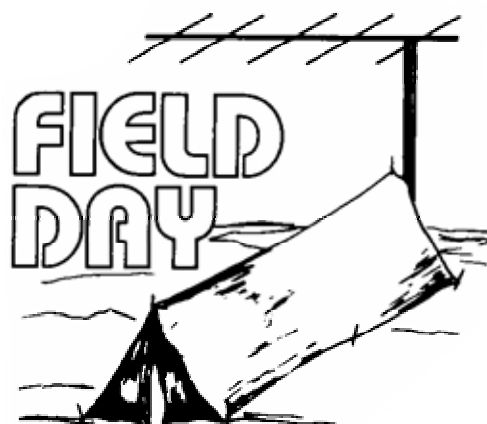


INFO

RARS Repeaters in Raleigh:
145.13
146.64
224.64
444.525 (88.5 PL)

WEB SITE <http://www.rars.org>

NEXT RARS MEETING:
May 13, 2003
NOTICE THE DATE CHANGE
FOR MAY ONLY



JUNE 28-29, 2003
NEAL N4HAF Field Day Chairman

RALEIGH AMATEUR RADIO SOCIETY MEETINGS

Date: *Every first Tues of the Month*

Location: *Forest Hills Baptist Church, at Dixie Trail and Clark Avenue, in Raleigh*

Time: *7:30pm, Folks start showing up a bit before 7 to chat, brag and eat donuts.*

VE TESTING: *The RARS VEs will accept walk-in testing which is on even months except April and December. Please bring a photo ID, your original current license if you have one, and any CSCEs you need for credit.. Check into the 8:00 pm net every night on the 146.64 repeater or www.rars.org for information.*

EVENTS

**EVENTS ARE COMING UP PLEASE
LISTEN TO THE NETS FOR MORE
INFORMATION!**

73 Magazine Offers Subscription Deal thru RARS

- ♦ **73 Magazine is offering RARS members a subscription discount. If at least three RARS members subscribe, the one-year price is \$20. That's for new subscriptions AND renewals. If you're interested in subscribing or renewing to 73, see Denyse at the membership table at the May meeting. Here's what 73 would like for you to know.**
- ♦ **Construction articles**
- ♦ **Cutting-edge technology**
- ♦ **Personal stories**
- ♦ **Niche interests list QRP, ARDF, and hamsats**
- ♦ **Travelogues and DXpeditions**

MAY RARS MEETING WILL BE ON 2ND

TUES 13th

The MAY RARS meeting will be held on the 2nd Tuesday, May 13, This move is for May 2003 only, at the request of our host, the Forest Hills Baptist Church. The church has a large conference scheduled for the first Tuesday that requires all the large meeting rooms. RARS will maintain its regular 1st Tuesday date for all other meetings.

All RARS members can obtain a membership card by calling Denyse KG4CXR 919-468-5358 or email KG4CXR@nc.rr.com

SPECIAL REQUEST FOR ASSISTANCE WITH RADIO NEWS HOUR

We are looking for someone to share responsibilities for playing the ARRL Radio Newshour every Sunday following the 8 PM net. The equipment needed for this is an interface between your computer and radio, such as a Rigblaster, as well as software to play a MPEG file. If you have questions or would like to volunteer, please contact Liz KF4UQZ or Mary KG4OQA.

**146.88 145.39, 147.105, & 147.135
Repeaters are supported by PCRN
if you would like to donate please
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PO Box 12734
Raleigh, NC 27605**

**More info on PCRN:
[Http://www.pcrn.net](http://www.pcrn.net)**

The Raleigh Amateur Radio Society is now accepting credit card payments online for new members and membership renewals. You can join or renew your membership completely online using a secure credit card payment process.

See the RARS website www.rars.org for more information to sign up for RARS membership or renew for 1, 2 or 3 years

ECHOLINK and Internet Linking

By Gary Pearce KN4AQ

Echolink is one of several systems for linking hams together using the Internet and VoIP (Voice over Internet Protocol). I've been playing with it a little since about November, and it's something you might find interesting. It's also something to watch out for.

Here in Raleigh, Internet linking got a big push when Danny Musten KD4RAA, Jim Price WW4M and Ron Casey K4JDR built their impressive series of repeaters using IRLP (Internet Radio Linking Project), along with traditional RF linking. They have several repeaters, including a network of UHF repeaters, capable of being linked to the world using IRLP. The 146.775 machine in west Raleigh is linked full-time to an IRLP "reflector" – a system that allows dozens of repeaters from around the world to be linked together all at once. It makes that repeater a real gateway to the world, with almost constant traffic. Their UHF repeater system has IRLP "Point-to-Point" linking capability, letting users dial-up a link to other IRLP equipped repeaters around the world "as needed." You just dial some touch-tones, including the node number of the repeater you want to connect to, and you are now talking through a repeater in Kinston, Denver, Honolulu, Sydney – your choice of about 800 repeaters world-wide (and growing fast). The audio and control signals are all sent via the Internet. (For more information, see www.kd4raa.net.)

Echolink is similar, but it has some significant differences. I'll compare and contrast it with IRLP.

IRLP allows connections only radio systems on its network.. As a "user," you can't connect to the IRLP network directly from your computer. The only people who are permitted to make the radio/computer/IRLP connection are registered sysops. To be a sysop, you need to use the IRLP interface card and software, set up in a computer running Linux (not Windows or Macintosh). The IRLP administrators manage your IRLP computer remotely. The IRLP rules say that all connections to the IRLP system begin and end on-the-air, with radio systems. It doesn't have to be a repeater – your radio system can be a simplex base station. It just has to be radio.

Echolink is a more open system. First, it uses Windows software. You can download it and install it on your own PC for free – if you are a licensed ham. The administrators check your callsign when you register, and you're not permitted to log into the system until your callsign "checks out." Second, you can connect to any of the thousand or so other stations logged on directly from your computer. You need a microphone / speaker or headset on your computer. There's no radio connected on your end at all! Echolink can and often does connect repeaters together, but it can do more. (IRLP could do all that, they just decided not to.)

I suppose there is an inevitable popularity contest between Echolink and IRLP. Echolink is already "winning," because it's more flexible and available. IRLP might have an edge in what I'll call "stability." It's more work to get an IRLP connected system going, so you might expect that someone who had done that much work would keep it going for a long time. Echolink connections on repeaters might be a bit more "easy come – easy go," but there's no reason a dedicated ham or club couldn't maintain an Echolink connection for years.

ON THE "AIR" WITH ECHOLINK

You download the Echolink software from www.echolink.org. On my DSL connection it just took a minute or two. Installation is quick and routine, and setup is pretty simple. Part of setup is registering the software with your callsign and e-mail address. The instructions say that the system administrators verify callsigns "by hand," so it might a few hours or a day before you get system access. Once you do, a list of active stations appears in a window. (The only thing tricky about setting up Echolink is making it work through a "firewall" like you have in a Linksys router. If you are connecting through a firewall, read the help files and follow the instructions carefully. Several hams I know have made it work.)

Browse the station list looking for something that catches your eye (callsigns and locations are listed), and double-click on the station you want to connect to.

What, or who, can you connect to? There are four categories of "stations": repeaters, links, users, and conferences. "Repeaters" is obvious – you make a connection that puts your voice out on a repeater somewhere, and you talk to hams who are using radios on the repeater. "Links" are hams who have connected their computer to their simplex base station, using one of several interfaces (including the well-known RigBlaster). "Users" are hams who are just connected via their computer – no radio attached, which is the way I'm currently connected. And "conferences" are facilities that allow dozens or even hundreds of repeaters, links and users to all be connected together at one time.

If you connect to a repeater or "link," there is probably an automatic announcement made that gives your callsign and says you've connected. That's an option the repeater sysop can make. You may or may not hear anything about that on your end, but you do get an on-screen indication of a successful connection. If there is activity on the repeater, you hear the hams talking. If the repeater is not busy, you might just hear silence.

When it's time to talk, your keyboard's SPACEBAR becomes your push-to-talk switch. You get a 'TX' icon on screen, and an audio "meter" that tells you what your sound card audio is doing. You might need to open your computer's "audio control" panel and adjust your mic level. You talk, they hear you, and when you're done you push the spacebar again to let go, and you listen. If you've connected to a repeater that's not busy, you can just push the spacebar and say something like "KN4AQ is connected through Echolink. Anybody around?" Sometimes you make contact, sometimes you don't.

If you connect to a "user" – someone just on a computer with no radio connection, you still use the spacebar for PTT. You're opening up a path to the other "station's" speaker, though, not activating a transmitter. Your connection is still "simplex" – only one of you can talk at a time, and there is no way to interrupt someone who's on a long-winded monolog. On repeaters, you do have to worry about timers, so you can set your own timer in the Echolink software setup to cut you off.

When I leave Echolink connected for a few hours while I'm at the PC, I'll get someone just dropping in every now and then. In fact, while I was writing this article, a ham in Buffalo NY just called me and we chatted for about a half hour. When you are talking "user-to-user" with no radio system, callsigns are not required, but hams tend to use them anyway. The conversations I've had were all very ham-radio-like, mostly using typical on-air procedure. Some of that procedure falls away when I'm talking to people I know well.

Roundtables can and do happen on Echolink. If you have a broadband connection (DSL, cable-modem), you can permit several "stations" to connect to you. Each connection takes about 15 to 20 kbps bandwidth, so a broadband connection can handle as many as 10 or 15. A dial-up connection has only 20 to 30 kbps available, so a single connection uses it all up.

It gets a bit complex, and I'm no expert on the network connection aspect of things, but if I'm connected to another station, and you then connect to me, you are brought into the roundtable (or conference) connection through me. If someone connects to you, then that person is brought into the whole conference – we're all talking together. It's not unusual to have several hams on a repeater or two connected to several more hams just on computers, all one big, happy conversation.

If a lot of hams want to participate in a single event, they can go to a conference server that can handle dozens or even hundreds of connections.

Speaking of dial-up, Echolink works OK using a dial-up connection. The audio quality is just as good. The problem I've seen is that there are sometimes silent "gaps" in transmission (and reception, when I used it dial-up at a motel on the road). The software collects data in a buffer before presenting it to the sound card and speaker, and if the data packets containing the audio are delayed, there can be a gap for a half second or so... then the audio picks back up where it left off, mid-syllable. If data is missing or delayed longer, you might miss a word or two. I've only had one

conversation where the path was so bad I couldn't understand what the person was saying. Missing bits of audio happen now and then. Connections between stations with broadband on each end are generally flawless.

Echolink is a second or maybe third generation implementation of VoIP for ham radio. I didn't try any of the earlier ones, but I heard complaints that the software, hardware and internet connections all left something to be desired. Echolink seems stable, and it works well. All the VoIP systems have a small timing issue because there is some buffering and delay as audio crosses the Internet. An itchy trigger-finger doesn't mix well with Internet linked systems. Leave long pauses.

REALLY ON THE AIR WITH ECHOLINK

If you decide to go beyond the Echolink "user" connection and hook it up to a radio, there are some things to keep in mind. It seems easy – the "sysop" mode is part of the software, so you just make connections between your sound card and serial connector to your radio using RigBlaster or one of the custom interfaces available, and you are on the radio. But what frequency to operate on?

You shouldn't operate on a repeater frequency unless you get permission from the repeater owner, and make the right technical adjustments. And when you do set up on a repeater, your radio becomes an Auxiliary Station as defined in the rules. Auxiliary Stations are not permitted on two meters, although you'll find a lot of them being set up that way for Echolink connections. The big problem is the potential for interference to co-channel neighbor repeaters from a busy link radio, especially during band openings. Linking the computer connection from home to the repeater is probably best done on SERA coordinated link frequencies.

You can operate on a simplex channel with less rigmarole. The FCC's Riley Hollingsworth told me in a *Repeater Journal* interview that he is inclined to let hams experiment with these systems without close FCC oversight for now to see what develops, as long as hams follow the general guidelines of the rules, and as long as a ham is in control of the emissions of any transmitter. If you plug your computer with Echolink into your base station transmitter, you are still the control operator, and must maintain full-time active control. You can use remote control (using a radio control link above 222.15 MHz) if you've got the capability.

Otherwise you should not walk or drive away from your radio when it's open to other users via the net. "Automatic control," a kind of fuzzy concept that allows repeaters and certain other stations to operate without immediate monitoring by a control operator, is not available to your Echolink-connected base station.

The February issues of the *Repeater Journal* and *QST* both have articles about using Internet linking, and recommendations on how to stay legal

IS IT HAM RADIO?

This is a good question to start a debate with. The initial reaction I get is an emphatic “NO!” Lots of people say IRLP isn’t ham radio, even though IRLP only permits signals that originate on the radio (mostly on repeaters) to cross its network. Well, some people say repeaters aren’t ham radio, either! The question really gets dicey when it’s two hams talking between computers on Echolink, with *no* radio connection. How could that *possibly* be ham radio?

Well, what is ham radio? It’s talking on the air, of course. But is that all? Is going to a club meeting, attending a hamfest, reading a ham magazine, building a project, or erecting an antenna “ham radio”? With that in mind, Echolink’s “of, by and for hams” orientation certainly makes it “ham radio.”

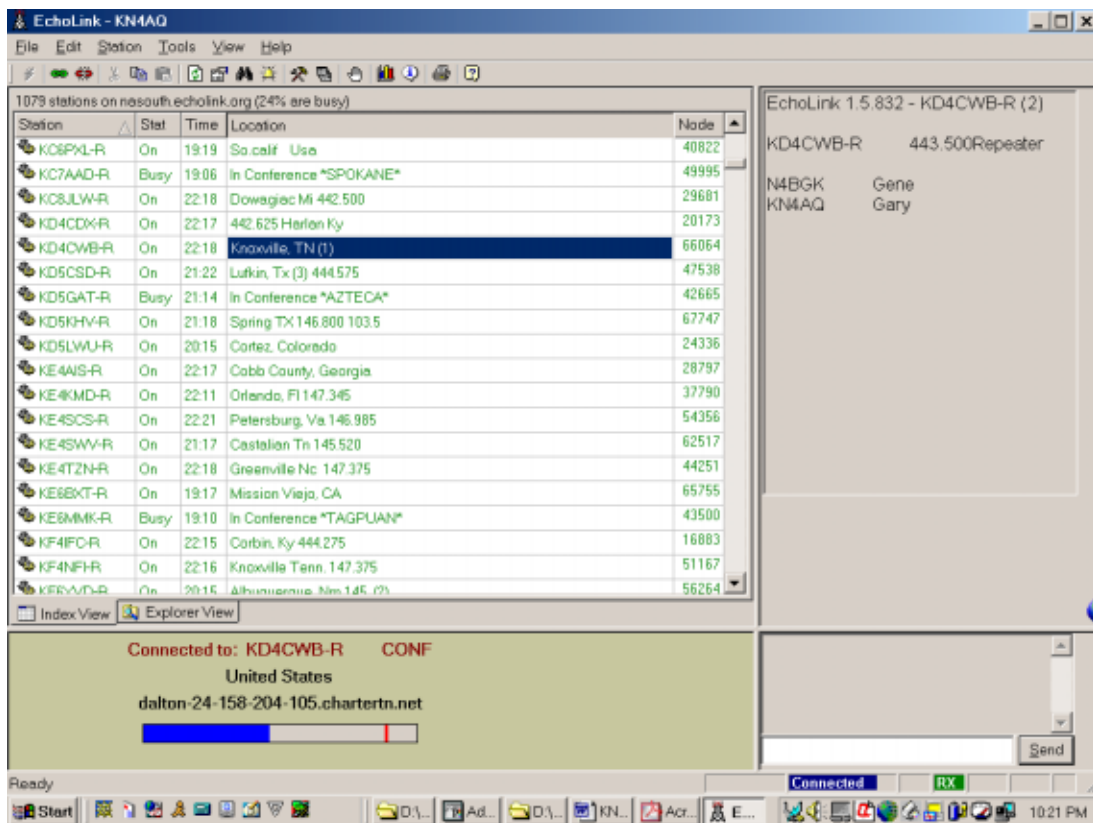
What I think worries people is diminishing the on-air aspect of Amateur Radio. Without on-air, we have nothing special. Anyone can use VoIP. We don’t need thousands of VoIP “contacts” replacing on-air activity.

So Internet linking has the ability to both enhance and detract from Amateur Radio. Linked repeaters and stations can spur activity as hams talk and listen to each other who otherwise might not get on the air today. Even all-computer contacts might keep hams interested in the hobby who might otherwise drop out. I suppose that the ease of connection on the Internet (and it is very easy to have quiet, high-fidelity conversations) might be a siren-song that pulls people off the air. Today, you have to be sitting by your computer to do it, leaving our handheld and mobile operation as a distinct ham-radio difference. But a very wireless Internet is coming - one more way ham radio will no longer be special.

Internet Linking is not going to go away, though, for better or for worse. The more you know about it, the better off you are. It’s your decision how much time you devote to on-air and off-air aspects of Amateur Radio.

When I first set up Echolink last November, I saw maybe one other ham in the Raleigh area listed, and a handful in North Carolina. Now there are a handful around Raleigh, and a dozen or two around the state. It’s growing fast, but it’s a long way from being in every shack. Is it in yours?

This is an actual Echolink operating “window”. The list of stations in the upper left is just a small sample of all the available stations – just look at the size and position of the Windows “scroll-bar.” In this example, I am actually connected to the KD4CWB repeater (in Knoxville, TN). N4GBK is also connected. You can see the “audio meter” – the bar in the lower left that’s half-blue and half-gray, and the “Connected” and “RX” indicators in the lower right. If we could animate this picture, you’d see the meter bob left-to-right following voice peaks. Also in the lower-right corner there is a white box next to a “send” button. Anyone connected can type text notes in the box and send them back and forth while others are speaking with voice. So someone on a computer connection can actually be “interrupted” with a text message, if they’re watching the screen.



RARS NEW MEMBERS

March 2003

We would like to welcome our new members to RARS. Thank you for considering us for your amateur radio club.

Carrie KG4RKZ
Sharon KA4ZBJ
Terry WA4BVY

NET REPORTS FOR March, 2003

- ♦ 8:00PM DAILY: RARS Evening Net
- ♦ 9:00PM MON: SWL SIG
- ♦ 8:30PM SAT : Tech & Traders net

Total Net Activity:

Minutes: 754
Check-Ins: 400 in 31 Sessions
Traffic : 40 brought 29 passed

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ODYSSEY OF THE MIND

By Dick KD4ISC

The 2003 public service season got off to a good start on March 8th as a group of local hams provided communications support for the Eastern Region Odyssey of the Mind Tournament. The event was held at Wakefield High School in northern Wake County. Contestants ranged from elementary to high school students who competed in one to seven long term problems and one spontaneous event. Students tackled problems with acting, music, cardboard, costumes, balsa wood and just about anything else you could think of. One event required teams to build structures made of balsa wood and glue. Each had to have three or more odd numbered legs. They were then graded on the structure's ability to balance and bear weight. Some of these balsa 'pods' were able to hold over 300 pounds!

Our hams provided communications for all of the event officials, problem managers, registration, volunteer coordination and logistics. Operations were conducted on two meter simplex with an open net forum. Everyone had a good time. We heard many positive comments on the service we provided.

I would like to thank all of those who helped with the event: Bob K1RCB, Marian K1MRB, Bob KG4IZA, Kevin W4KJD, David KD4WQU, Mike KC4WUH, Dick W8HYD, Brian KA9QJT, Larry KG4FIQ, Gil KG4YJG, Morris KG4VIH and Mark W4CHL.

So, if you want to see some kids compete with some neat projects, find out about Omers or Ranatra Fusca or just want to see a bunch of funny hats, keep you eyes open for Odyssey of the Mind volunteer opportunities next year.

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MINUTES OF THE RARS BOARD MEETING, TUESDAY, FEB 18, 2003

The RARS board meeting was held at Forest Hills Baptist Church on Tuesday, Feb 18, 2003. Members present were: K1RCB, K4HF, K4HM, KA2FWC, KE4PAX, KG4CXR, KG4FIJ, KG4OQA, KN4AQ, NI4S, W8HYD, W4BRB, and WA2UZO. Total present: 14.

The meeting was called to order by President Bernard Blackmon W4BRB at 7:32 PM.

On motion by W8HYD, second by KN4AQ, the January 2003 board meeting minutes were approved.

V.P. Report (NI4S): RARS Birthday Party planned for March club meeting. Representative from Time-Warner Cable will present the program at the April club meeting.

Treasurer's Report (KE4PAX): There are currently 289 members.

FM Committee (KA2FWC): Expect .13 repeater to be on the air soon. General repeater discussion ensued.

Exciter (KG4CXR): Looking for ideas for the cover photo of the April issue.

Net Manager (KG4OQA): Nets are going very well. There have been many new check-ins recently.

Webmaster (WA2UZO): All issues of the Exciter are now available on the public portion of the RARS web site. Tim Nicholson W4NOT is working on putting the Hamfest schedule online.

Membership Services (KG4CXR): No report.

Hamfest (K4HM): Tickets are now on sale. Flyers will be in the mail soon. Next Hamfest planning meeting is 2/24. There's a nice ad for the Hamfest in the current SERA Journal.

Field Day: No report.

Public Information (KN4AQ): Presented a well-received presentation about amateur radio at a recent Raleigh Ski & Outing Club. The presentation is now canned and available for anyone to use if needed.

Education (KN4AQ for W4NOT): Next RARS Technician Class starts first Monday in March, and will go 6 weeks.

VE Team (W4BRB for KO4CK/WA4GIR): No report.

Public Service (K1RCB): Next public service event is Odyssey of the Mind at Wakefield High School on Mar 8. MS Society has requested by letter that RARS support their events in 2003. General discussion about upcoming events.

ARRL Liaison (K4HF): ARRL has received additional funds from Dept. of Homeland Security, which results in more opportunities to take online courses and have fees reimbursed.

Nominating Committee: No report.

W4DW/W4RNC Trustee: No report.

Special or Ad Hoc Committees: Report of the Financial Review Committee was presented by K4HM. Report covers Jun 1, 2002 through Dec 10, 2002.

Unfinished Business: W8HYD updated on request to help fund Israel and Camille's trip to Handy-Ham Camp in Minnesota. Total trip costs are approximately \$1,300. After discussion, it was decided by consensus to grant \$500.00 out of the 2003-2004 budget in July.

New Business:

May club meeting date is moved to May 13 due to availability of the church.

W8HYD presented a request from K4RLC to discuss the possibility of purchasing a portable repeater for club use. Potential challenges are the weight of a VHF duplexer, and coordination issues. Discussion ensued but no decision made.

KG4OQA reported that Liz KF4UQZ is looking for a back-up to present the ARRL News Hour. Will be brought up at the March club meeting.

KE4PAX reported that the Grants & Donations line item of the current budget is down to \$400.00, and we usually give an annual \$200.00 donation to the ARRL News Hour and \$200.00 to the Triangle Reading Service. He was directed to go ahead and make the two donations right away.

KN4AQ informed that "73" magazine is offering subscriptions at a discounted price of \$20.00 if a minimum of 3 club members order subscriptions.

On motion by KA2FWC the meeting adjourned at 9:05 PM.

Respectfully Submitted by Jim KG4FIJ

MINUTES OF THE RARS MEETING

Tuesday, April 1, 2003

The meeting was called to order at 7:35 by President Bernard Blackmon W4BRB.

Treasurer's Report (Greg KE4PAX): There are currently 296 members

ANNOUNCEMENTS:

- Hank K4HM gave a status report on the RARS Hamfest scheduled for Sunday, April 13, 2003. Tickets are available. Still need workers. There will be drawings for cash incentive prizes for hours worked. Reviewed set-up, Sat. night banquet, security, admissions, flea market, tear down, talk-in, stage, and RARS table.
- Gary KN4AQ gave update on current Technician Class. Tune-in-the-World night will be Monday, April 7 at 7:30 PM. Invited anyone interested to take part.
- Neal N4HAF announced Field Day will be 4th weekend in June at the same location as last year (Jim Carroll's property). He's presently assigning band captains. Also announced code class will start on Monday, April 21.
- Tom N4TAB gave an update on ARES matters.
- David KF4VXJ spoke about, and distributed copies of, H.R. 1478, Amateur Radio Communications Consistency Act, which has to do with restrictive covenants. Asked for everyone's support of this bill.
- W4BRB announced that May meeting will be the 2nd Tuesday of the month due to a conflict with a church event.



Photo by Gary KN4AQ

Mark Clark KG4VNL

PROGRAM: Mark Clark KG4VNL of Time-Warner Cable gave an excellent program about the cable TV industry, both overall and local.

Door prizes were won by: N4VQN, WA4GIR, and AB4OZ.

Meeting adjourned at 9:25 PM.

Submitted by Jim Walter KG4FIJ



Triangle area hams were well represented in the April 2003 issue of QST.

By Gary KN4AQ

The Public Service column was a review of the communications handled by OCRA and Orange County ARES during the December ice storm, written by John Trolinger W4ZKK.

And a feature article titled "Spreading the Word" by ARRL Media Relations Manager Jennifer Hagy N1TDY used RARS' Field Day at the Capitol in 2001 as a "Success Story" example of how club PIOs can attract publicity for Amateur Radio. The article quotes RARS PIO Gary Pearce KN4AQ saying "If you have the manpower and the interest, the rewards of doing Field Day in full public view are as great as seeing your score posted at the top of your category." RARS, of course, has done both.

**The Central Carolina
Skywarn Net Meets
Tuesdays at 9:15 PM
on 146.88 Repeater**



Remember to give damage reports AFTER the storms as well as DURING the storms.

March 27 a Skywarn class was held in Cary. The class was given by Jeff Orrock the NWS severe weather coordinator. Several more classes will be held through the spring/summer months.

Photo by Denyse KG4CXR



SKYWARN MONTHLY DINNER MEETING
By Denyse KG4CXR AEC Skywarn Wake County

The April 27th dinner will be at "Chen's China Buffet- 12516 Capital Blvd. Location is just north of intersection of Capital Blvd (US Highway 1) and Highway 98 in Wake Forest. Phone # 570-8173. Time is 5:00-7:00pm.

IRLP Skywarn net Every Saturday at 7:00 pm, 441.725 + (88.5 PL tone) It is interesting to hear different weather information from around the world.



Photo by Jim KG4FIJ



**Join Us At the
RARS Dinner**

**On 4th Tuesday, 6:30 pm at
Fat Daddy's on Glenwood Ave.**



Every Wednesday 9:30 145.19

HAMFEST CALENDAR

May 10	Durham, NC
May 16-18	Dayton, OH
May 17	Williamston, NC
June 7	Winston-Salem, NC
July 12	Salisbury, NC
July 19	Cary, NC
July 26	Waynesville, NC

Courtesy of the SERA Repeater Journal



FRONT COVER: Event Coordinator Bob KG4IZA consults with Dick KD4ISC before an approaching storm.

MS Society walk on April 5 was canceled due to a storm that was moving in. Thanks to Eric KG4CXW for keeping an eye on the RADAR and reporting via radio.

The cold rain arrived right on cue, just as the walk was scheduled to begin. But with a heads-up look at the weather, the organizers got everyone moving a little early. Instead of walking the full 3 mile route, the huge crowd walked about a half mile to a covered parking deck for lunch. The hams missed out on SAGing, rest stop operating and such, but we were heroes for keeping an eye on the weather, and keeping the walkers from being in the middle of the course when the storm hit.



Bob K1RCB and Chuck K4HF



Photos by Gary KN4AQ

Mark WD4KSE Bruce KC4UQN Kevin W4KJD